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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/702,348	11/06/2003	Earl C. Johns	S01.12-0978	8100

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SEAGATE TECHNOLOGY LLC C/O WESTMAN
CHAMPLIN & KELLY, P.A.
SUITE 1400
900 SECOND AVENUE SOUTH
MINNEAPOLIS, MN 55402-3319

EXAMINER

OLSON, JASON C

ART UNIT	PAPER NUMBER
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2627

MAIL DATE	DELIVERY MODE
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07/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/702,348

Applicant(s)

JOHNS ET AL.

Examiner

Jason C. Olson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13-20 and 24-28 is/are rejected.
- 7) ☒ Claim(s) 10-12 and 21-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

The Requirement for Restriction/Election mailed on 04/04/07 is withdrawn. All claims in the current application are examined.

Claim Objections

Claim 5 is objected to because of the following informalities: The claim as written does not make sense. The examiner suggests that the claim read, "wherein the write electrode and the read electrode are carried in a dielectric material. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 recites the limitation "the write electrode" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1, 2, 5, 6, 8, 13-15, 18, 24-26, and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Saito et al. (U.S. Pat. 5,886,922), hereafter "Saito".

Regarding claim 1, Saito teaches a read electrode configured to carry an electrical charge of a first charge polarity orientation proximate a ferroelectric domain of the ferroelectric storage medium which has a second charge polarity orientation; and wherein the ferroelectric domain changes polarity and an electrical readback current flows in the read electrode when the first charge polarity orientation and the second charge polarity orientation are opposite (see col. 8, ln. 46-65, the conductive needle is a read electrode).

Regarding claim 2, Saito teaches a shield which extends around the read electrode (see figure 2, a shield extends around the conductive needle 22, exposing the tip 22a).

Regarding claim 5, Saito teaches the write electrode and read electrode in a dielectric material (see figures 1 and 2 and corresponding description; the electrodes 22 are in a insulation layer b, which is a dielectric material).

Regarding claim 6, Saito teaches a controller configured to apply the electrical charge to the read electrode and sense the readback current (see col. 8, ln. 46-65 and col. 9, ln. 49-58; the W/R circuitry controls the electrical charge to the read/write electrode and senses the readback current).

Regarding claim 8, Saito teaches a ferroelectric transducer configured to move relative to a storage medium having a surface of a ferroelectric material (see col. 8, lns. 5-11 and 52-58).

Regarding claim 13: claim 13 has limitations similar to those treated in the above rejection(s), and are met by the references as discussed above. Claim 13 however also recites the following limitation as taught by Saito, an array of ferroelectric transducers (see col. 9, ln. 49-53

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and figure 1 illustrates an array of transducers); and an actuator configured to move the storage medium relative to the array (see col. 8, ln. 5-14 and figure 4 illustrates and actuator 91).

Regarding claims 14, 15, 18, and 24: method claims 14, 15, 18, and 24 are drawn to the method of using the corresponding apparatus claimed in claims 1, 2, 5, 6, 8, and 13. Therefore method claims 14, 15, 18, and 24 correspond to apparatus claims 1, 2, 5, 6, 8, and 13 and are rejected for the same reasons of anticipation as used above.

Regarding claims 25, 26, and 28: claims 25, 26, and 28 have limitations similar to those treated in the above rejection(s), and are met by the references as discussed above

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 4, 7, 16, 17, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito.

Regarding claim 3, Saito teaches a write electrode configured to apply an electric field to the ferroelectric medium to thereby impress an electrical polarization on ferroelectric domains of the ferroelectric medium; and wherein the write electrode trails the read electrode and is configured to impress the second charge polarity on the ferroelectric domain following a read operation in which the charge polarity of the ferroelectric domain was changed (see col. 7, ln. 49-col. 8, ln. 4, col. 8, ln. 63-65, col. 9, ln. 49-58, and figure 1; it is obvious to an artisan in the

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art that a second electrode in the array, shown in figure 1, is positioned with the X-Y control mechanism to rewrite the destroyed data, following a read operation).

Regarding claim 4, Saito teaches a shield which extends between the read electrode and the write electrode (see col. 10, ln. 1-14 and figures 1 and 2; the insulation layer 1B is a shield that extends between a first probe, read probe and a second probe, write probe in the array).

Regarding claim 7, Saito teaches a controller configured to apply a charge to the write electrode following a read operation in which the charge polarity of the ferroelectric domain was changed (see col. 7, ln. 49-col. 8, ln. 4, col. 8, ln. 63-65, col. 9, ln. 49-58, and figure 1; it is obvious to an artisan in the art that a second electrode in the array, shown in figure 1, is positioned with the X-Y control mechanism and controlled via the W/R circuit 31 to rewrite the destroyed data, following a read operation).

Regarding claims 16 and 17: method claims 16 and 17 are drawn to the method of using the corresponding apparatus claimed in claims 3, 4, and 7. Therefore method claims 16 and 17 correspond to apparatus claims 3, 4, and 7 and are rejected for the same reasons of obviousness as used above.

Regarding claim 27: claim 27 has limitations similar to those treated in the above rejection(s), and are met by the references as discussed above.

Claims 9, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saito in view of Onoe et al (U.S Pat. 7,221,639), hereafter "Onoe".

Regarding claim 9, Saito fails to teach the transducer is carried on a slider proximate the surface, however, Onoe is relied upon to teach a ferroelectric transducer carries on a slider

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proximate a ferroelectric surface (see col. 7, ln. 59-65 and figures 1A and 1B; the ferroelectric transducer 11 is carried on a slider 52 proximate a ferroelectric surface 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to improve upon a ferroelectric storage system of Saito by applying the teaching of a ferroelectric transducer carried on a slider proximate a ferroelectric surface as taught by Onoe for the reasons that a pickup device, used for dielectric recording/reproducing, equipped with a recording/reproducing head for recording/reproducing data in/from a dielectric recording medium has a simple structure, is easy to produce, and is appropriate for mass production as stated by Onoe in column 2, lines 1-8.

Regarding claims 19 and 20: method claims 19 and 20 are drawn to the method of using the corresponding apparatus claimed in claim 9. Therefore method claims 19 and 20 correspond to apparatus claim 9 and are rejected for the same reasons of obviousness as used above.

Allowable Subject Matter

Claims 10-12 and 21-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails to teach alone or in combination slider is configured to wear until an equilibrium is reached during operation, the slider includes a trim region proximate a trailing edge of the slider, and the ferroelectric transducer is positioned proximate the trim region, whereby the trim region is positioned between the ferroelectric transducer and the trailing edge of the slider.

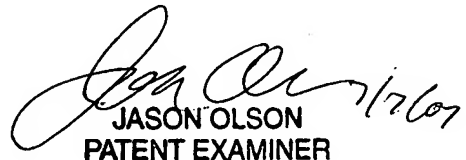
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason C. Olson whose telephone number is (571)272-7560. The examiner can normally be reached on Monday thru Thursday 7:30-5:30; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R. Korzuch can be reached on (571)272-7589. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


JASON OLSON
PATENT EXAMINER